

DETAILED ACTION - ALLOWANCE

Claim Status

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed July 6, 2009, has been entered. Claims 1 and 4 have been amended. No claims were cancelled or newly added. Claims 1-4 and 6 are pending in the application.

Claims 1-4 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Furcht et al. (U.S. Patent No.: 7,015,037; effective filing date: Aug. 5, 1999), in view of Kokuzawa et al. (U.S. Patent Application Publication No.: 2006/0134078; effective filing date: Dec. 2, 2002), in the previous Office action dated January 6, 2009.

Applicants have amended base claims 1 and 4 to limit the growth factors to epidermal growth factor and hepatocyte growth factor. Applicants have further provided a Rule §1.132 Declaration by Dr. Hyun-Soo Kim, showing that the claimed method comprising a confluent culture of MSCs prior to their differentiation into neural cells results in an unexpectedly significant increase in a differentiation rate of MSC, as compared to a method without a confluent culture of MSCs prior to their differentiation. In view of the claim amendments and the evidence provided, the rejection is hereby withdrawn.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicants' representative on September 3, 2009.

The application has been amended as follows:

In the claims,

Claim 1 has been re-written as follows:

1. A method of differentiating and proliferating a mesenchymal stem cell into a neural cell, said method comprising the two steps of:

- (1) confluent culturing the mesenchymal stem cell as a pretreatment, and
- (2) culturing the confluent mesenchymal stem cell in a medium comprising growth factors, wherein the growth factors are epidermal growth factor and hepatocyte growth factor; whereby the confluent mesenchymal stem cell differentiates into a neural cell.

Claim 4 has been re-written as follows:

4. The method of claim 1, wherein the mesenchymal stem cell is cultured for about 2 weeks in the medium comprising growth factors, wherein the growth factors are epidermal growth factor and hepatocyte growth factor, and then the medium comprising the epidermal growth factor and the hepatocyte growth factor is changed with a medium consisting of epidermal growth factor.

REASONS FOR ALLOWANCE:

The following is an examiner's statement of reasons for allowance:

The closest prior art is that of Furcht et al. (of record), teaching the confluent culturing and differentiation of mesenchymal stem cells. However, the confluent culturing described by Furcht et al. was not described as differentiating the cells into neural cells. Further, as evidenced by the Rule 1.132 Declaration of co-inventor Hyun-Soo Kim, the confluent culturing as a pretreatment prior to differentiation in the presence of epidermal growth factor and hepatocyte growth factor results in an unexpectedly significant increase in the differentiation rate of MSCs into neural cells. It is additionally noted that the claims in U.S. Patent No.: 7,299,827 are not directed to a method of differentiating mesenchymal stem cells wherein the cells are first cultured to confluence as a pretreatment step.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 1-4 and 6 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FEREYDOUN G. SAJJADI whose telephone number is (571)272-3311. The examiner can normally be reached on 6:30 AM-3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Fereydoun G Sajjadi/
Primary Examiner, Art Unit 1633